

## BPSC TRE 4.0 - Prelims Content PDF - English

**Q.1** Which of the following passes connects Arunachal Pradesh with Tibet?

- A. Changla
- B. Banihal
- C. Agil
- D. Bom-di-La

**Answer:** D

**Sol: Correct Answer: (D) Bom-di-La**

**Explanation:**

→ **Bom-di-La Pass** is a strategic mountain pass located in the Greater Himalayas in **Arunachal Pradesh**.

→ It connects the western border region of Arunachal Pradesh (Tawang district) with **Lhasa, Tibet**.

→ It lies at an elevation of approximately 2,217 meters above sea level.

→ It serves as a historical and strategic trade and transport corridor in northeastern India.

**Information Booster:**

→ **Dihang Pass** and **Yonggyap Pass** are other strategic passes in Arunachal Pradesh connecting with China/Tibet.

→ **Diphu Pass** is situated at the tri-junction of India, China, and Myanmar in eastern Arunachal Pradesh.

**Sela Pass** connects Tawang to the rest of Arunachal Pradesh.

→ The famous Buddhist monastery of **Tawang** is located near this mountain pass corridor.

**Additional Information:**

**Option (A) Changla:** High mountain pass located in **Ladakh** on the route to Pangong Lake.

**Option (B) Banihal:** Located in **Jammu and Kashmir** across the Pir Panjal range, connecting Jammu with the Kashmir Valley.

**Option (C) Agil:** Mountain pass located in the Karakoram range north of K2, connecting **Ladakh** with Xinjiang region.

**Q.2** In which latitudes is the salinity of ocean water highest?

- A. 20° - 40°
- B. 0° - 10°
- C. 10° - 20°
- D. 40° - 60°

**Answer:** A

**Sol: Correct Answer: (A) 20° - 40°**

**Explanation:**

→ The maximum surface salinity of ocean water is observed in the subtropical high-pressure belts between **20° and 40° latitudes**.

→ High rate of **evaporation** caused by high temperatures and clear anti-cyclonic skies increases salt concentration in these zones.

→ These latitudinal belts experience extremely low **precipitation** and minimal freshwater inflow from major rivers.

→ The trade wind zones within these latitudes continuously carry away moisture, further raising surface ocean **salinity levels**.

**Information Booster:**

→ The average salinity of the open oceans is approximately **35 parts per thousand (‰)**.

→ Highest open-ocean salinities (up to 37‰–38‰) are recorded in sub-tropical zones like the **Sargasso Sea**.

→ The **Red Sea** displays very high surface salinity (around 41‰) due to negligible rainfall and intense evaporation.

→ Isohalines are geographical lines drawn on maps connecting points of **equal ocean salinity**.

→ Salinity increases water density, which plays a pivotal role in driving global **thermohaline circulation**.

**Q.3** In the Santhal Rebellion (1855-57), Santhals mainly directed their anger against:

- A. British officers, zamindars, traders and local moneylenders
- B. Soldiers of the Bengal army posted in distant cantonments
- C. Traditional village headmen and clan chiefs of their own tribe
- D. Missionaries who distributed free food during the famine

**Answer:** A

**Sol:** The correct answer is **(A) British officers, zamindars, traders and local moneylenders**

**Explanation:**

- The Santhal Rebellion (Santhal Hool) of 1855–1856 was a massive anti-colonial tribal uprising in the Rajmahal Hills region led by the brothers Sidhu, Kanhu, Chand, and Bhairav.

- The Santhals directed their resistance against 'Dikus' (outsiders), comprising oppressive British officers, non-tribal zamindars, cunning traders, and predatory local moneylenders (mahajans).
- Following the introduction of the Permanent Settlement of 1793, Santhals cleared dense forests to cultivate the 'Damin-i-Koh' region, but were subsequently trapped in exorbitant tax demands and lifelong debt cycles by moneylenders.
- When colonial police and courts consistently sided with exploitative landlords and money-lenders, the Santhals took up arms to establish an independent Santhal Raj.
- Armed with traditional bows, arrows, spears, and axes, thousands of Santhals fought courageously before the British army brutally suppressed the uprising with superior firepower.

Information Booster:

- Sidhu and Kanhu declared divine inspiration for their movement, claiming the supreme deity 'Thakur Bonga' commanded them to drive out oppressive outsiders.
- In the aftermath of the rebellion, British authorities created a distinct administrative territory called 'Santhal Parganas' and passed the Santhal Parganas Tenancy Act to safeguard tribal land ownership.
- June 30 is celebrated annually as 'Hool Diwas' in Jharkhand and West Bengal to honor the bravery and sacrifice of Santhal martyrs.
- The Santhal Rebellion predated the Revolt of 1857 and served as a major inspiration for subsequent peasant and tribal struggles across India.
- Santhals constitute one of the largest Scheduled Tribe communities in eastern India, primarily residing in Jharkhand, West Bengal, Odisha, and Bihar.

Additional Knowledge:

- Soldiers of the Bengal army (Option B): Santhals fought local police and British forces in their immediate region, not army cantonments located in distant military posts.
- Traditional village headmen (Option C): The rebellion sought to defend traditional tribal governance institutions (such as Manjhis and Paramaniks) rather than oppose them.
- Missionaries (Option D): Christian missionaries were not the primary focus of hostility; the main grievances stemmed from economic exploitation by land agents, merchants, and British administration.

Q.4 Match List-I with List-II:

| List-I               | List-II               |
|----------------------|-----------------------|
| [A] Birju Maharaj    | [I] Journalist        |
| [B] G. T. Nanavati   | [II] Film star        |
| [C] Puneeth Rajkumar | [III] Kathak exponent |
| [D] Vinod Dua        | [IV] Judge            |

Choose the correct answer from the options given below:

- A. [A]-[IV]; [B]-[III]; [C]-[II]; [D]-[I]
- B. [A]-[II]; [B]-[IV]; [C]-[III]; [D]-[I]
- C. [A]-[III]; [B]-[IV]; [C]-[II]; [D]-[I]
- D. [A]-[I]; [B]-[II]; [C]-[III]; [D]-[IV]

Answer: C

Sol: The correct answer is (C) [A]-[III]; [B]-[IV]; [C]-[II]; [D]-[I]

Explanation:

- Pandit Birju Maharaj [A] matches with Kathak exponent [III]: He was a legendary maestro of the Kalka-Bindadin gharana of Kathak dance and a recipient of Padma Vibhushan.
- Justice G. T. Nanavati [B] matches with Judge [IV]: He was a distinguished former Supreme Court Judge who headed inquiry commissions into the 1984 anti-Sikh riots and 2002 Gujarat riots.
- Puneeth Rajkumar [C] matches with Film star [II]: Affectionately known as 'Appu', he was a celebrated superstar, actor, playback singer, and producer in Kannada cinema.
- Vinod Dua [D] matches with Journalist [I]: He was a veteran Indian broadcast journalist, news anchor, and pioneer of Hindi television journalism.
- Therefore, the correct matching option is [A]-[III]; [B]-[IV]; [C]-[II]; [D]-[I].

Information Booster:

- Pandit Birju Maharaj belonged to a legendary family of Kathak dancers which included his uncles Shambhu Maharaj and Lachhu Maharaj, and his father Acchan Maharaj.
- Justice Girish Thakorlal Nanavati served as a judge of the Gujarat High Court, Chief Justice of Orissa and Karnataka High Courts, and was elevated to the Supreme Court of India.
- Puneeth Rajkumar won the National Film Award for Best Child Artist for his performance in 'Bettada Hoovu' (1985) and received Karnataka's highest civilian award 'Karnataka Ratna' posthumously.
- Vinod Dua was awarded the Ramnath Goenka Excellence in Journalism Award and the Padma Shri in 2008 for his notable contributions to broadcast journalism.

- All four iconic personalities passed away between late 2021 and early 2022, making significant news headlines across the nation for their enduring legacies in their respective fields.
- The matching highlights prominent Indian figures in classical performing arts, judiciary, Indian cinema, and media journalism.

**Additional Knowledge:**

- Option A ([A]-[IV]; [B]-[III]; [C]-[II]; [D]-[I]): Incorrect because it falsely pairs Birju Maharaj as a judge and Justice Nanavati as a Kathak exponent.
- Option B ([A]-[II]; [B]-[IV]; [C]-[III]; [D]-[I]): Incorrect because it misidentifies Birju Maharaj as a film star and Puneeth Rajkumar as a Kathak exponent.
- Option D ([A]-[I]; [B]-[II]; [C]-[III]; [D]-[IV]): Incorrect because it incorrectly pairs Birju Maharaj with journalism and Vinod Dua with judiciary.

**Q.5** The NITI Aayog, created in 2015, replaced the Planning Commission as part of India's development restructuring. What is the correct full form of NITI?

- A. National Independent Think-tank of India
- B. National Interface for Technological Innovation
- C. National Initiative for Traditional Industries
- D. National Institution for Transforming India

**Answer:** D

**Sol:** The correct answer is **(D) National Institution for Transforming India**

**Explanation:**

- NITI Aayog stands for the National Institution for Transforming India.
- It was established on January 1, 2015, via a resolution of the Union Cabinet, effectively replacing the 65-year-old Planning Commission.
- NITI Aayog serves as the premier policy 'Think Tank' of the Government of India, providing both directional and policy inputs.
- Unlike the Planning Commission, which followed a top-down model and centralized resource allocation, NITI Aayog emphasizes a 'bottom-up' approach.
- Its core philosophy revolves around 'Cooperative Federalism', ensuring maximum participation of State Governments in formulating national policies.

**Information Booster:**

- The Prime Minister of India serves as the ex-officio Chairperson of the NITI Aayog.
- The Governing Council of NITI Aayog comprises the Chief Ministers of all States and the Lieutenant Governors of Union Territories.
- It publishes several vital developmental indices, including the SDG India Index, the Health Index, the Composite Water Management Index, and the Innovation Index.
- The organization is structured around specialized hubs, such as the Team India Hub (interfacing with states) and the Knowledge and Innovation Hub (building think-tank capabilities).

**Additional Knowledge:**

- **(A) National Independent Think-tank of India:** An incorrect expansion. Though NITI acts as a think-tank, this is not its official acronym.
- **(B) National Interface for Technological Innovation:** Incorrect. While NITI Aayog promotes technology (e.g., through Atal Innovation Mission), this is not its name.
- **(C) National Initiative for Traditional Industries:** Incorrect. SFURTI (Scheme of Fund for Regeneration of Traditional Industries) deals with traditional industries, not NITI.

**Q.6** According to the NITI Aayog report “Key Sectors to Position India as a Global Manufacturing Hub”, which of the following is NOT among the four high-potential sectors identified to drive India’s manufacturing growth?

- A. Chemicals
- B. Textiles
- C. Pharmaceuticals and medical devices
- D. Solar PV manufacturing

**Answer:** C

**Sol: Correct Answer: (c) Pharmaceuticals and medical devices**

**Explanation:**

- The NITI Aayog report identified **four high-potential sectors** with significant potential to drive India’s manufacturing growth and strengthen its position in global value chains.
- These are **Chemicals, Textiles, Telecom and Networking Equipment, and Solar PV Manufacturing.**
- **Pharmaceuticals and medical devices** is one of the 12 key manufacturing sectors but is **not among the four high-potential sectors** specifically highlighted.

**Information Booster:**

- The report identified **12 manufacturing sectors** for targeted interventions to strengthen India’s position as a global manufacturing hub.
- The study followed a **four-phase approach**, including sector selection, assessment, international benchmarking and development of sector-specific recommendations.
- The report was released by **Ashok Kumar Lahiri**, Vice Chairperson of NITI Aayog.

**Additional Knowledge:**

- Other sectors covered include **automobiles, electronics, steel, capital goods, defence and drones, leather and footwear, and food processing.**
- The report aims to enhance **competitiveness, domestic capabilities, value addition and export-oriented manufacturing.**

**Q.7** Kepler's second law of planetary motion is also known as

- A. Law of periods
- B. Law of equal areas
- C. Law of orbits
- D. Law of planets

**Answer:** B

**Sol:**

The correct answer is {b}.

**Explanation**

{i} Kepler's second law states that the line joining a planet and the Sun sweeps out **equal areas in equal intervals of time.**

{ii} This implies that the planet moves **faster when it is nearer the Sun** and **slower when it is farther away.**

{iii} Therefore, Kepler's second law is known as the **Law of Equal Areas.**

Hence, the correct answer is {b}.

**Additional Information**

{i} Kepler's first law is the **Law of Orbits**, which states that planets move in elliptical orbits with the Sun at one focus.

{ii} Kepler's third law is the **Law of Periods**, which states that the square of the orbital period is proportional to the cube of the semi-major axis of the orbit.

**Q.8** Consider the following states:

- I. Tamil Nadu
- II. Maharashtra
- III. Gujarat
- IV. Karnataka

According to the 2011 Census, the correct descending order of the level of urbanisation (% of urban population over total population) of these states is:

- A. I, II, III, IV
- B. II, I, III, IV
- C. IV, III, II, I
- D. I, III, IV, II

**Answer:** A

**Sol: Correct Answer: (A) I, II, III, IV**

**Explanation:**

→ According to Census 2011, **Tamil Nadu** leads among major states with an urban population percentage of **48.4%.**

→ **Maharashtra** ranks second among these states with an urbanisation level of **45.2%.**

→ **Gujarat** occupies the third position in this group, recording an urban population proportion of **42.6%.**

→ **Karnataka** ranks fourth among the given states, with an urban population standing at **38.6%.**

**Information Booster:**

→ As per Census 2011, overall urban population of India was recorded at **31.16%.**

→ Among all States, **Goa** is the most urbanised state with **62.2%** urban population.

→ Among Union Territories, **Delhi** tops the list with **97.5%** urban population.

→ **Himachal Pradesh** is the least urbanised state in India, with only **10.0%** urban population.

→ In terms of total absolute numbers of urban residents, **Maharashtra** ranks highest in India.

**Q.9** Which four objectives of the Constitution are explicitly mentioned in the Preamble of India?

- A. Parliament, President, Judiciary, Election
- B. Rights, Duties, Laws, Governance
- C. Justice, Liberty, Equality, Fraternity
- D. Sovereign, Republic, Secular, Monarchy

**Answer:** C

**Sol:** The correct answer is **(C) Justice, Liberty, Equality, Fraternity**

**Explanation:**

- The Preamble to the Constitution of India explicitly outlines four grand objectives that the Republic promises to secure for all its citizens: Justice, Liberty, Equality, and Fraternity.
- **Justice:** Encompasses Social, Economic, and Political justice, ensuring an equitable society free from discrimination based on caste, gender, or wealth.
- **Liberty:** Guarantees freedom of thought, expression, belief, faith, and worship, securing fundamental rights necessary for individual self-fulfillment.
- **Equality:** Guarantees equality of status and of opportunity, eliminating arbitrary privileges and providing equal advancement opportunities under Articles 14 to 18.
- **Fraternity:** Assures the dignity of the individual and the unity and integrity of the Nation, instilling a sense of common brotherhood across diverse linguistic and religious groups.

**Information Booster:**

- The Preamble is based on the historic 'Objective Resolution' drafted and moved by Pandit Jawaharlal Nehru in the Constituent Assembly on December 13, 1946, and adopted on January 22, 1947.
- The Preamble was amended for the first and only time by the 42nd Constitutional Amendment Act of 1976, which added three new words: "Socialist", "Secular", and "Integrity".
- In the landmark *Kesavananda Bharati case (1973)*, the Supreme Court ruled that the Preamble is an integral part of the Constitution and contains its Basic Structure.
- The ideals of Liberty, Equality, and Fraternity embedded in our Preamble were inspired by the motto of the French Revolution (1789–1799).

**Additional Knowledge:**

- **Parliament, President, Judiciary, Election (Option A):** Refers to structural institutions and mechanisms of governance established under individual Constitutional Parts (Part V & XV), not the moral objectives stated in the Preamble.
- **Rights, Duties, Laws, Governance (Option B):** Descriptive legal concepts covered across Part III (Fundamental Rights), Part IV-A (Duties), and executive rules, rather than the core preamble values.
- **Sovereign, Republic, Secular, Monarchy (Option D):** Incorrect combination because "Monarchy" is opposite to "Republic", and these describe the *nature of the Indian State* (Sovereign, Socialist, Secular, Democratic, Republic) rather than the *objectives to be secured for citizens*.

**Q.10** A bifocal lens is used as a remedy in which of the following defects in the eyes?

- A. Hypermetropia
- B. Presbyopia
- C. Astigmatism
- D. Myopia

**Answer:** B

**Sol:**

The correct answer is {b}.

**Explanation**

- {i} **Presbyopia** is an age-related defect of vision caused by the gradual loss of elasticity of the eye lens and weakening of the ciliary muscles.
  - {ii} A person suffering from presbyopia experiences difficulty in viewing nearby objects clearly.
  - {iii} A **bifocal lens** consists of two parts:
    - The upper part is a **concave lens** for distant vision.
    - The lower part is a **convex lens** for near vision.
  - {iv} Therefore, bifocal lenses are used to correct **presbyopia**.
- Hence, the correct answer is {b}.

**Additional Information**

- {i} The defects of vision and their correction are:
  - Myopia → Corrected using a concave lens.
  - Hypermetropia → Corrected using a convex lens.
  - Presbyopia → Corrected using a bifocal lens.
  - Astigmatism → Corrected using a cylindrical lens.

**Q.11** Match List-I (Congress Sessions in Bihar) with List-II (Presidents) and select the correct answer:

| List-I (Session Site) | List-II (President) |
|-----------------------|---------------------|
| A. Bankipore (1912)   | 1. C.R. Das         |
| B. Gaya (1922)        | 2. R.N. Mudholkar   |

C. Ramgarh (1940) 3. Maulana Abul Kalam Azad

Codes:

- A. A-2, B-1, C-3
- B. A-1, B-2, C-3
- C. A-2, B-3, C-1
- D. A-3, B-2, C-1

Answer: A

Sol: The correct answer is (a) A-2, B-1, C-3

Explanation:

- The 27th session of the INC was held at **Bankipore (Patna)** in **1912** and was presided over by **Rao Bahadur R.N. Mudholkar**.
- The 37th session took place in **Gaya** in **1922** under the presidency of **Chittaranjan Das (C.R. Das)**, where the Swaraj Party concept began to form.
- The 53rd session was held in **Ramgarh (now in Jharkhand)** in **1940**, presided over by the prominent leader **Maulana Abul Kalam Azad**.

Information Booster:

- The Bankipore session of 1912 was the very first Indian National Congress session hosted in the territory of Bihar.
- C.R. Das resigned from his INC presidency after the Gaya session due to differences over council entry, leading to the formation of the Swaraj Party.

Additional Knowledge:

A-1, B-2, C-3 (Option b)

- Incorrect mapping. C.R. Das did not preside over the 1912 session; he led the 1922 Gaya session.

A-2, B-3, C-1 (Option c)

- Incorrect mapping. Maulana Azad presided over Ramgarh, not Gaya.

A-3, B-2, C-1 (Option d)

- Incorrect mapping entirely mixing the sessions and their respective presidents.

So the correct answer is (a).

Q.12 What is the basis of Human Development Index (HDI) ?

- A. Health, Education, Employment, Life style
- B. Health, Education, Employment
- C. Health, Education, Life style
- D. Education, Employment, Life style

Answer: C

Sol: The correct answer is **(C) Health, Education, Life style**

Explanation:

- The Human Development Index (HDI) measures average achievement in three basic dimensions of human development: Health, Education, and Standard of Living (Life style).
- **Health Dimension:** Measured by Life Expectancy at Birth.
- **Education Dimension:** Measured by Mean Years of Schooling for adults aged 25+ and Expected Years of Schooling for children entering school.
- **Standard of Living (Life style) Dimension:** Measured by Gross National Income (GNI) per capita adjusted for Purchasing Power Parity (PPP).
- Employment is not used as a direct standalone parameter in calculating the basic HDI value.

Information Booster:

- HDI was created by Pakistani economist Mahbub ul Haq and Indian Nobel laureate Amartya Sen in 1990.
- It is published annually by the United Nations Development Programme (UNDP) in its Human Development Report.
- HDI calculates geometric means across normalized indices for the three dimensions, outputting scores between 0 and 1.
- Other related composite indices published by UNDP include the Inequality-adjusted HDI (IHDI), Gender Development Index (GDI), and Planetary pressures-adjusted HDI (PHDI).

Q.13 Which animal was favoured the most by the Harappans?

- A. Horse
- B. Goat

- C. Humped bull
- D. Camel

**Answer:** C

**Sol:** The correct answer is **(C) Humped bull**

**Explanation:**

- Among the diverse fauna depicted in Harappan artifacts, seals, pottery, and terracotta figurines, the humped bull (Zebu / Bos indicus) was favoured and celebrated by the Harappan (Indus Valley) Civilization.
- Archaeological excavations across major Harappan sites like Harappa, Mohenjo-daro, and Kalibangan yield widespread depictions of majestic humped bulls with large curving horns and prominent muscular humps.
- The humped bull held profound agricultural, transport, and symbolic or religious importance in Indus Valley society, featuring prominently on famous steatite seals alongside single-horned mythical beasts ("unicorns").
- Animal bones recovered from Harappan archaeological deposits confirm that domesticated humped cattle were central to local agrarian economy, draft labor, and pastoralism.

**Information Booster:**

- As outlined in NCERT Class 12 History (Theme 1: Bricks, Beads and Bones), cattle, sheep, goat, buffalo, and pig were among the primary domesticated animals kept by Harappans.
- Archaeo-zoologists and wildlife historians indicate that wild species such as boar, deer, and gharial were also known through archaeological skeletal remains and pottery motifs.
- The horse was notably absent or extremely rare in mature Harappan contexts, serving as a primary distinguishing line between Harappan urban culture and later Vedic pastoral societies.
- Terracotta models of bullock carts recovered from Indus sites demonstrate that humped bulls were harnessed for transport of agricultural produce and trade commodities across regional trade networks.

**Additional Knowledge:**

Horse (Option A): Horses were not part of mainstream Harappan culture; horse remains and evidence are contentious or absent in mature Harappan layers, becoming significant in Vedic texts.

Goat (Option B): Goats were domesticated and raised for meat and milk, but they lacked the artistic prominence and symbolic representation given to the humped bull on seals.

Camel (Option D): Camel bones have been found in small traces at specific sites like Kalibangan, but camels were not widely depicted or favored in Harappan art and iconography compared to humped cattle.

**Q.14** Which climatic phenomenon is responsible for sudden winter rainfall in North-West India?

- A. Easterly waves
- B. Local winds
- C. Jet streams
- D. Western Disturbances

**Answer:** D

**Sol:** The correct answer is **(D) Western Disturbances**

**Explanation:**

- Western Disturbances are extratropical low-pressure cyclonic systems that originate over the Mediterranean Sea, Black Sea, and Caspian Sea.
- Driven by the upper-atmosphere subtropical westerly jet stream, these weather systems travel eastward across the Middle East, Iran, Afghanistan, and Pakistan to enter northern India.
- They bring sudden winter rain to the plains of Punjab, Haryana, Delhi, Rajasthan, and Western Uttar Pradesh, accompanied by heavy snowfall in the Himalayan region.
- The winter rainfall brought by Western Disturbances, locally referred to as 'Mahawat', is highly beneficial for the cultivation of Rabi crops, particularly wheat.
- These disturbances are crucial for maintaining glacier volume in the Himalayas and sustaining the perennial flow of North Indian rivers.
- Detailed in NCERT Class 9 Geography (Climate) and NCERT Class 11 India: Physical Environment (Chapter 4: Climate).

**Information Booster:**

- As Western Disturbances travel across Central Asia, they pick up moisture from the Mediterranean Sea and moisture-rich inland bodies of water.
- A sudden increase in prevailing night temperatures usually serves as a key atmospheric indicator of an approaching Western Disturbance.
- The Subtropical Westerly Jet Stream bifurcates around the Tibetan Plateau during winter, with its southern branch steering these disturbances across northern India.
- Excessive or unusually intense Western Disturbances can trigger cold waves, dense fog, destructive hailstorms, and severe winter landslides in mountain passes.
- On average, about 4 to 5 Western Disturbance events cross North India each month during the peak winter months of December, January, and February.

**Additional Knowledge:**

- **Easterly waves (Option A):** Shallow atmospheric low-pressure troughs embedded in the tropical easterly trade wind belt that cause precipitation along eastern coastal regions.

- **Local winds (Option B):** Periodic or diurnal winds generated over localized areas due to regional heating variations (e.g., Loo in summer, Mango

Showers, Blossom Showers).

• **Jet streams (Option C):** Fast-flowing, narrow air currents located near the tropopause; while westerlies carry the disturbances, the jet stream itself is the wind belt rather than the storm phenomenon.

**Q.15** In which state were the 77th Senior and 54th Junior National Track Cycling Championships held from 19 to 24 December 2025?

- A. Uttar Pradesh
- B. Punjab
- C. Uttarakhand
- D. West Bengal

**Answer:** C

**Sol:** The correct answer is **(C) Uttarakhand**

**Explanation:**

- The 77th Senior and 54th Junior National Track Cycling Championships were hosted in the northern state of Uttarakhand from 19 to 24 December 2025.
- The premier national sports event was organized under the auspices of the Cycling Federation of India (CFI) in collaboration with the Uttarakhand State Sports Department.
- Held at the specialized sports arena in Dehradun, the competition featured top professional cyclists, state teams, and sports boards competing across various track events.
- Discipline categories included individual time trials, sprint, team pursuit, keirin, point races, and scratch races for both senior and junior men and women categories.
- Hosting national championships reinforces Uttarakhand's growing athletic infrastructure and commitment to fostering national sports events in mountain regions.

**Information Booster:**

- The Cycling Federation of India (CFI), established in 1946, is the recognized national governing body for bicycle racing in India, affiliated with the Union Cycliste Internationale (UCI) and Asian Cycling Confederation (ACC).
- Track cycling takes place on specialized banked oval wooden or concrete tracks known as velodromes.
- High-performance indoor velodromes feature steep banked turns designed to offset centrifugal force at high sprinting speeds.
- Prominent track cycling disciplines include sprint (short explosive race), pursuit (endurance pursuit over fixed distance), and omnium (multi-race composite event).
- Government flagship sports development programs such as 'Khelo India' provide training and financial assistance to promising young athletes across various Olympic disciplines.

**Additional Knowledge:**

- Uttar Pradesh (Option A): Home to modern sports venues such as the Vijay Singh Pathik Sports Complex and Buddha International Circuit area, hosting various national athletic championships.
- Punjab (Option B): A traditional powerhouse state in Indian track athletics, hockey, and cycling, frequently contributing top international competitors to national squads.
- West Bengal (Option D): Historically renowned for sports like football, table tennis, and archery, with iconic facilities including the Salt Lake Stadium and Netaji Indoor Stadium.

**Q.16** Where was the first Jain Mahasabha held to determine the form of the ancient Jain scriptures?

- A. Pataliputra
- B. Shravanabelagola
- C. Ujjain
- D. Mathura

**Answer:** A

**Sol: Correct Answer: (A) Pataliputra**

**Explanation:**

- The **First Jain Council (Mahasabha)** was held at **Pataliputra** in the 3rd century BCE (circa 300 BCE).
- It was convened under the leadership of **Sthulabhadra** during the reign of Mauryan ruler **Chandragupta Maurya**.
- The main outcome was the compilation of the **12 Angas** to preserve sacred Jain oral traditions.
- This council also marked the initial split between the **Svetambara and Digambara** traditions.

**Information Booster:**

- The **Second Jain Council** was held at **Vallabhi (Gujarat)** in 512 CE under the chairmanship of **Devardhi Kshamasramana**.
- The final compilation of Jain Agamas in written form took place at the **Vallabhi Council**.
- Sacred Jain canonical literature was recorded in the **Ardhamagadhi Prakrit language**.
- Lord Mahavira was the **24th Tirthankara** of Jainism born at Kundagrama near Vaishali.
- Bhadrabahu led the Jain migration south to **Karnataka** during a severe 12-year famine in Magadha.

**Q.17** Which of the following pairs is not correctly matched?

- A. Downs - Australia
- B. Llanos – South Africa
- C. Pampas - Argentina
- D. Prairies - Canada

**Answer:** B

**Sol: Correct Answer: (B) Llanos – South Africa**

**Explanation:**

- The pair **Llanos – South Africa** is incorrectly matched because **Llanos** is a tropical grassland region located in **South America** (mainly Venezuela and Colombia).
- Tropical grasslands in South Africa are known as **Savanna**, while its temperate grasslands are called **Veld**.
- The **Llanos** experience a tropical wet-and-dry climate driven by seasonal rainfall patterns.
- Hence, matching Llanos with South Africa is incorrect, making option B the correct response to the question.

**Information Booster:**

- **Llanos** lies in the Orinoco River basin of Venezuela and Colombia.
- **Veld** represents the temperate grassland of South Africa.
- Downs** are temperate grasslands located in Southeastern Australia.
- **Pampas** form fertile temperate plains located primarily in Argentina and Uruguay.
- **Prairies** cover vast mid-latitude temperate areas across the USA and Canada.

**Q.18** Arrange the following events in the correct chronological order:

- I. Chauri-Chaura incident
- II. Jallianwala Bagh Massacre
- III. Lahore Congress Session
- IV. Launch of Non-Cooperation Movement

Options:

- A. II, IV, I, III
- B. I, II, IV, III
- C. II, I, IV, III
- D. IV, II, I, III

**Answer:** A

**Sol: Correct Answer: (A) II, IV, I, III**

**Explanation:**

- **Jallianwala Bagh Massacre (II)** took place on **13th April 1919** in Amritsar.
- **Launch of Non-Cooperation Movement (IV)** occurred in **August 1920**.
- **Chauri-Chaura Incident (I)** occurred on **4th February 1922** in Gorakhpur.
- **Lahore Congress Session (III)** took place in **December 1929** under Jawaharlal Nehru.
- Thus, the correct chronological sequence is **II, IV, I, III**.

**Information Booster:**

- General Dyer ordered unprovoked firing at unarmed citizens in **Jallianwala Bagh**.
- Non-Cooperation Movement was approved at the special **Calcutta session (1920)** of INC.
- Chauri Chaura violence led directly to Mahatma Gandhi withdrawing Non-Cooperation.
- The **Lahore Session (1929)** formally adopted the resolution for **Purna Swaraj** (Complete Independence).
- 26th January 1930 was celebrated as the first Independence Day following the Lahore session.

**Q.19** A periscope makes use of

- A. Three spherical mirrors
- B. Two spherical mirrors
- C. Three plane mirrors
- D. Two plane mirrors

**Answer:** D

**Sol:**

The correct answer is {d}.  
**Explanation**  
{i} A **periscope** is an optical instrument used to observe objects that are not in the direct line of sight.  
{ii} A simple periscope consists of **two plane mirrors** placed parallel to each other.  
{iii} Each mirror is inclined at an angle of **45°** to the axis of the tube.  
{iv} The first mirror reflects the light downward, and the second mirror reflects it towards the observer's eye.  
Hence, the correct answer is {d}.  
**Additional Information**  
{i} Modern periscopes may use **right-angled prisms** instead of plane mirrors to obtain brighter images.  
{ii} Periscopes are commonly used in submarines, tanks and observation posts.

**Q.20** The hydro-power stations at the Sault Saint Marie Rapids are located at the outlet of which lake?

- A. Lake Superior
- B. Lake Erie
- C. Lake Ontario
- D. Lake Huron

**Answer:** A

**Sol: Correct Answer: (A) Lake Superior**

**Explanation:**  
→ The hydroelectric power stations at Sault Ste. Marie Rapids sit on the **St. Marys River**, which serves as the direct outlet for **Lake Superior**.  
→ Water flows out of Lake Superior through these rapids down into **Lake Huron**, dropping approximately 6 meters in elevation.  
→ This significant drop in water level creates strong water head pressures ideal for generating **hydroelectric power**.  
→ The famous Soo Locks bypass these rapids, providing a navigable canal link between **Lake Superior and the lower Great Lakes**.  
**Information Booster:**  
→ **Lake Superior** is the world's largest freshwater lake by surface area.  
→ The **Great Lakes system** consists of Superior, Michigan, Huron, Erie, and Ontario.  
→ St. Marys River forms a natural international border between **Ontario (Canada) and Michigan (USA)**.  
→ Niagara Falls is located along the Niagara River between **Lake Erie and Lake Ontario**.  
→ Lake Michigan is the only Great Lake situated **entirely within the United States**.  
**Additional Information:**  
**Option (B) Lake Erie:** Outlet is the **Niagara River**, famous for Niagara Falls and Niagara hydro stations.  
**Option (C) Lake Ontario:** Outlet is the **St. Lawrence River**, draining the entire Great Lakes basin into the Atlantic Ocean.  
**Option (D) Lake Huron:** Connected to Lake Erie via the **St. Clair River, Lake St. Clair, and Detroit River** system.

**Q.21** The hundred years of Indian National Congress in Bihar was edited by

- A. P. N. Ojha
- B. K. K. Datta
- C. B. B. Mishra
- D. A. R. Desai

**Answer:** A

**Sol:** The correct answer is **(A) P. N. Ojha**

**Explanation:**  
• The highly comprehensive historical volume titled "The Hundred Years of Indian National Congress in Bihar (1885–1985)" was compiled and edited under the general editorship of the legendary historian Dr. P. N. Ojha.  
• This monumental work was officially commissioned and published by the Kashi Prasad Jayaswal Research Institute in Patna to commemorate the historic centenary celebrations of the Indian National Congress.  
• The text provides a detailed, well-researched chronicle of Bihar's foundational role in the freedom struggle, documenting how early nationalist ideas spread from urban centers to motivate rural masses during major agitations.

**Information Booster:**

- Dr. P. N. Ojha was an eminent academician and scholar who specialized in the socio-cultural history of medieval and modern India, heading major research bodies and university departments across Bihar.
- The Kashi Prasad Jayaswal Research Institute (KPJRI) was established by the Government of Bihar in October 1950 to promote historical, institutional, and archaeological studies of regional and national importance.
- Bihar was a central stage for India's freedom movement, hosting the historic Bankipur (Patna) INC Session in 1912 and serving as the primary launching pad for Mahatma Gandhi's first Satyagraha in Champaran.

**Additional Knowledge:**

- K. K. Datta (Option B): A towering contemporary historian from Bihar who authored the famous three-volume masterpiece "History of the Freedom Movement in Bihar", which remains an authoritative source code for historical researchers.
- B. B. Mishra (Option C): A highly respected institutional historian who produced profound analytical studies focusing on the social changes, structural evolution, and growth of the Indian middle classes and bureaucracy.
- A. R. Desai (Option D): A legendary Indian sociologist renowned for his seminal Marxist historical analysis titled "Social Background of Indian Nationalism", which examines the economic forces behind the anti-colonial struggle.

**Q.22** Which of the given schedules of the Indian Constitution includes the provision regarding Anti-Defection Law?

- A. Sixth Schedule
- B. Eleventh Schedule
- C. Seventh Schedule
- D. Tenth Schedule

**Answer:** D

**Sol:** The correct answer is **(D) Tenth Schedule**

**Explanation:**

- The Tenth Schedule of the Indian Constitution contains the comprehensive legal provisions regarding the Anti-Defection Law.
- It was inserted into the Constitution by the 52nd Constitutional Amendment Act, 1985, during the prime ministership of Rajiv Gandhi.
- The law sets down the criteria and process for disqualifying legislators (MPs and MLAs) on grounds of defection from one political party to another.
- The Presiding Officer (Speaker or Chairman) of the respective House is vested with the statutory authority to decide cases of disqualification under the Tenth Schedule.

**Information Booster:**

- The 91st Constitutional Amendment Act, 2003, modified the Tenth Schedule by omitting the provision regarding exemption from disqualification in case of a 'split' (one-third members).
- Now, a merger requires at least two-thirds of the members of a legislature party to agree to merge with another party without incurring disqualification.
- In the landmark Kihoto Hollohan case (1992), the Supreme Court ruled that the decision of the Speaker under the Tenth Schedule is subject to judicial review.

**Additional Knowledge:**

- Sixth Schedule (Option A): Contains provisions regarding the administration of tribal areas in four north-eastern states: Assam, Meghalaya, Tripura, and Mizoram.
- Eleventh Schedule (Option B): Added by the 73rd Constitutional Amendment Act, 1992; contains 29 functional matters under the jurisdiction of Panchayats.
- Seventh Schedule (Option C): Deals with the distribution of legislative powers between the Union and States through three lists: Union List, State List, and Concurrent List.

**Q.23** Which River is known as sorrow of Bihar?

- A. Son
- B. Gandak
- C. Kosi
- D. Damodar

**Answer:** C

**Sol: Correct Answer: (C) Kosi**

**Explanation:**

- The **Kosi River** is famously known as the **Sorrow of Bihar** due to its frequent, devastating floods and tendency to shift courses.
- It carries heavy silt loads from the high Himalayas, causing riverbed elevation and frequent breach of embankments.
- It is a trans-boundary river originating in Tibet/Nepal (formed by seven upper tributaries known as Saptakoshi).
- It joins the **Ganga river** near Kursela in Katihar district, Bihar.

**Information Booster:**

- The **Damodar River** was historically known as the **Sorrow of Bengal** before construction of dams under DVC.

- The **Kosi Barrage** was constructed at Bhimnagar near the Indo-Nepal border to control flooding.
- The Kosi River has shifted its channel westward by over 100 km during the last two centuries.
- Major tributaries of Kosi include the **Arun, Sun Kosi**, and **Tamur**.

**Additional Information:**

- Option (A) Son:** A major right-bank tributary of Ganga originating at Amarkantak, known for sand deposits rather than catastrophic shifting floods.
- Option (B) Gandak:** Left-bank tributary of Ganga originating in Nepal, known for Saligram stones, not titled Sorrow of Bihar.
- Option (D) Damodar:** Tributary of Hooghly River, historically called the **Sorrow of Bengal**.

- Q.24** Which regulatory body launched the ‘**SEBI Incident Reporting**’ and ‘**Cyber Suraksha**’ portals in August 2026 to strengthen cybersecurity in the securities market?
- A. Reserve Bank of India (RBI)
  - B. Insurance Regulatory and Development Authority of India (IRDAI)
  - C. Securities and Exchange Board of India (SEBI)
  - D. Pension Fund Regulatory and Development Authority (PFRDA)

**Answer:** C

**Sol: Correct Answer: (c) Securities and Exchange Board of India (SEBI)**

**Explanation:**

- **SEBI** launched the ‘**SEBI Incident Reporting**’ and ‘**Cyber Suraksha**’ portals to strengthen cybersecurity and information sharing across the securities market ecosystem.
- The **SEBI Incident Reporting Portal** aims to make cyber-incident reporting more **structured, timely and actionable**.
- The **Cyber Suraksha Portal** serves as a central platform for sharing cybersecurity information and incident-related insights.

**Information Booster:**

- The Incident Reporting Portal is aligned with the **Financial Stability Board (FSB)’s Format for Incident Reporting Exchange (FIRE)**.
- This alignment facilitates smoother **cross-border exchange of cyber-incident information**.
- The portals were launched during SEBI’s **Symposium on Cyber Defence**, held in Mumbai from **17–21 August 2026**.

**Additional Knowledge:**

- **Tuhin Kanta Pandey**, Chairman of SEBI, also inaugurated the **RegTech Lab** at the **NISM Patalganga campus**.
- The RegTech Lab aims to promote **technology-enabled learning** in regulatory compliance and securities-market regulation.
- **NISM** stands for **National Institute of Securities Markets**.

- Q.25** Ibn Battuta served as Qazi under which Delhi Sultan?

- A. Iltutmish
- B. Muhammad bin Tughlaq
- C. Firoz Shah Tughlaq
- D. Alauddin Khilji

**Answer:** B

**Sol: Correct Answer: (B) Muhammad bin Tughlaq**

**Explanation:**

- Ibn Battuta, the Moroccan traveler, was appointed as the **Qazi (judge) of Delhi** by Sultan **Muhammad bin Tughlaq**.
- He held this administrative post for nearly six years due to his expertise in Islamic jurisprudence (Sharia).
- Later, Muhammad bin Tughlaq dispatched him as his envoy to the **Yuan Dynasty court in China** in 1342.
- Ibn Battuta recorded his observations about India in his famous travelogue titled **Rihla**.

**Information Booster:**

- Ibn Battuta arrived in Sindh in **1333 CE** after traveling through North Africa and West Asia.
- His book **Rihla** provides detailed accounts of postal systems, trade, society, and Tughlaq governance.
- Muhammad bin Tughlaq is famous for five controversial experiments, including shifting the capital to **Daulatabad**.
- The Sultan introduced a **token currency system** made of copper and brass in 1329–30.
- Ibn Battuta described the Indian postal network divided into horse post (uluq) and foot post (dawa).

**Additional Information:**

- Option (A) Iltutmish:** Real founder of the Delhi Sultanate who introduced the **Iqta system** and **Chahalgani**.
- Option (C) Firoz Shah Tughlaq:** Known for establishing canal networks, hospitals (Dar-ul-Shafa), and public works.
- Option (D) Alauddin Khilji:** Introduced strict **market control policies**, branding of horses (Dagh), and descriptive rolls (Chehra).

- Q.26** Which of the following Constitutional Amendments introduced Part IX related to Panchayats in India?
- A. 44th Amendment
  - B. 73rd Amendment
  - C. 42nd Amendment
  - D. 86th Amendment

**Answer:** B

**Sol:** The correct answer is **(B) 73rd Amendment**

**Explanation:**

- The 73rd Constitutional Amendment Act, 1992 inserted Part IX titled "The Panchayats" into the Constitution of India.
- This landmark legislation accorded constitutional status to Rural Local Self-Government institutions (Panchayati Raj Institutions).
- It added Articles 243 to 243O and inserted the 11th Schedule, which contains 29 functional matters devolved to Panchayats.
- The Act came into force on April 24, 1993, a date celebrated annually in India as National Panchayati Raj Day.
- It established a mandatory 3-tier Panchayati Raj system: Gram Panchayat at the village level, Panchayat Samiti at the block level, and Zilla Parishad at the district level.

**Information Booster:**

- Mandates a minimum of 33% (one-third) reservation of seats for women in all rural local bodies across decision-making levels.
- Mandates setting up an independent State Election Commission (Article 243K) for regular 5-year elections and a State Finance Commission (Article 243I) every 5 years.
- Balwant Rai Mehta Committee (1957) was the first committee to recommend a 3-tier Panchayati Raj system in India.
- Article 40 in the Directive Principles of State Policy (DPSP) laid down the directive for the organization of village panchayats.

**Additional Knowledge:**

- **44th Amendment (Option A):** Enacted in 1978; restored fundamental rights safeguards after Emergency and removed the Right to Property from Fundamental Rights.
- **42nd Amendment (Option C):** Known as the 'Mini-Constitution' (1976); added words Socialist, Secular, Integrity to Preamble and inserted Fundamental Duties (Part IV-A).
- **86th Amendment (Option D):** Enacted in 2002; inserted Article 21A making free and compulsory education a fundamental right for children aged 6 to 14 years.

**Q.27** After Indian independence, Community Development Programme was started in

- A. 1952
- B. 1964
- C. 1982
- D. 1985

**Answer:** A

**Sol:** The correct answer is **(A) 1952**

**Explanation:**

- The Community Development Programme (CDP) was officially launched in India on October 2, 1952 (on Mahatma Gandhi's birth anniversary).
- It was a major comprehensive initiative aimed at overall rural reconstruction, socio-economic transformation, and agricultural advancement in post-independence India.
- The program was initiated during the First Five-Year Plan (1951–1956) with operational and financial assistance under the Indo-US Technical Cooperation Agreement.
- CDP focused on key rural aspects: agriculture, animal husbandry, rural communications, health, sanitation, education, and social welfare.
- To implement the program at the grass-root level, rural areas were divided into 'Development Blocks', headed by a Block Development Officer (BDO) along with Village Level Workers (Gram Sevaks).

**Information Booster:**

- In 1953, the National Extension Service (NES) was launched as a supporting initiative to provide basic administrative structures for rural extension services.
- In 1957, the Government of India appointed the Balwant Rai Mehta Committee to examine the working of the Community Development Programme and the National Extension Service.
- The Balwant Rai Mehta Committee reported that CDP lacked popular community participation and recommended 'Democratic Decentralisation', which led to the creation of the 3-tier Panchayati Raj system.
- Rajasthan became the first state in India to establish the Panchayati Raj system at Nagaur district on October 2, 1959.
- The 73rd and 74th Constitutional Amendment Acts of 1992 eventually gave formal constitutional status to rural and urban local self-governments in India.

**Additional Knowledge:**

- 1964 (Option B): Marked by the establishment of key financial and developmental institutions like the Industrial Development Bank of India (IDBI) and the Central Vigilance Commission (CVC).
- 1982 (Option C): Famous for the establishment of NABARD (National Bank for Agriculture and Rural Development) on July 12, 1982, based on the recommendation of the B. Sivaraman Committee.
- 1985 (Option D): Marked by the launch of the Indira Awaas Yojana (IAY) as a sub-scheme of the Jawahar Rozgar Yojana to provide housing for rural poor.

**Q.28** The depth of the "weathering mantle" is cited as a factor in:

- A. P-wave direction in the shadow zone
- B. Volcanic frequency at the Ring of Fire
- C. The speed of the Earth's rotation
- D. Regional biomes and biodiversity

**Answer:** D

**Sol: Correct Answer: (D) Regional biomes and biodiversity**

**Explanation:**

- The **weathering mantle** (regolith layer) consists of loose, weathered rock debris sitting above unweathered bedrock.
- Its depth dictates soil formation, nutrient availability, and water-retention capacity essential for sustaining **plant growth**.
- Deep weathering mantles in humid tropics support rich primary vegetation, driving the establishment of diverse **regional biomes and biodiversity**.
- Consequently, the thickness of weathered material directly dictates ecological productivity and species richness across **terrestrial ecosystems**.

**Information Booster:**

- Deepest weathering mantles occur in warm, humid tropical regions like equatorial rainforests due to intense **chemical weathering**.
- Cold or arid zones (deserts, tundra) feature extremely thin weathering mantles due to minimal **chemical breakdown**.
- The interface between weathered regolith and unweathered bedrock is termed the **weathering front**.
- Chemical weathering processes include **hydration, oxidation, carbonation, and hydrolysis**.
- Deep regolith stores groundwater that helps buffer plant communities during **dry seasons**.

**Q.29** A severe deficiency of Vitamin K in the human body primarily leads to which of the following conditions?

- A. Night blindness
- B. Scurvy
- C. Delayed blood clotting
- D. Rickets

**Answer:** C

**Sol:** The correct answer is **(C) Delayed blood clotting**

**Explanation:**

- Vitamin K is an essential fat-soluble vitamin that plays an absolutely critical role in the human body's coagulation (blood clotting) pathways.
- It acts as a coenzyme required for the synthesis of several key proteins, most notably 'prothrombin', which the liver produces to form blood clots.
- A severe deficiency of Vitamin K means these clotting factors cannot be produced. Consequently, a person experiences delayed blood clotting, resulting in excessive bleeding or hemorrhaging even from minor cuts or internal injuries.

**Information Booster:**

- **Newborns:** Infants are born with very low levels of Vitamin K. To prevent a fatal bleeding condition called 'Vitamin K deficiency bleeding' (VKDB), it is standard global medical practice to give a Vitamin K injection immediately after birth.
- **Natural Sources:** It is highly abundant in dark leafy green vegetables like spinach, kale, and broccoli.

**Additional Knowledge:**

- **Night blindness (Option A):** Caused by a severe deficiency of Vitamin A (Retinol).
- **Scurvy (Option B):** Caused by a chronic deficiency of Vitamin C (Ascorbic acid).
- **Rickets (Option D):** A bone-softening condition in children caused by a severe deficiency of Vitamin D.

**Q.30** Who called the Revolt of 1857 a struggle between "Civilization and Barbarism"?

- A. V.D. Savarkar
- B. John William Kaye
- C. R.C. Majumdar
- D. T.R. Holmes

**Answer:** D

**Sol: Correct Answer: (D) T.R. Holmes**

**Explanation:**

- British historian **T.R. Holmes** characterized the 1857 Revolt as a conflict between '**Civilization and Barbarism**'.
- This Eurocentric view framed British rule as civilization and the Indian freedom fighters as uncivilized rebels.
- Such imperialist interpretations aimed to justify British military suppression and colonial dominance.
- Nationalist Indian historians strongly rejected this characterization in later historical studies.

**Information Booster:**

- **V.D. Savarkar** called the revolt '**The Indian War of Independence 1857**' in his 1909 book.
- **Sir John William Kaye** authored '**History of the Sepoy War in India**'.
- **R.C. Majumdar** stated it was 'neither First, nor National, nor a War of Independence'.
- **Benjamin Disraeli** described it as 'a national rising, not a sepoy mutiny'.
- **S.N. Sen** wrote the official history titled '**1857**' for the Government of India.

**Q.31** Identify the CORRECT statement about the chlor-alkali process:

- A. It is used for the preparation of  $\text{Na}_2\text{CO}_3$  solution by electrolysis of brine.
- B. Hydrogen gas is formed at the cathode and chlorine gas at the anode.
- C. Sodium hydroxide is generated near the anode during electrolysis.
- D.  $\text{NaOH}$  is formed at the anode and chlorine gas at the cathode.

**Answer:** B

**Sol:** The correct answer is **(B) Hydrogen gas is formed at the cathode and chlorine gas at the anode.**

**Explanation:**

- The chlor-alkali process is the industrial electrolysis of sodium chloride solution (brine).
- When electricity is passed through an aqueous solution of  $\text{NaCl}$ , it decomposes to form sodium hydroxide ( $\text{NaOH}$ ), chlorine gas ( $\text{Cl}_2$ ), and hydrogen gas ( $\text{H}_2$ ).
- During this electrolysis, chloride ions are oxidized at the positive electrode (anode) to release chlorine gas, while water is reduced at the negative electrode (cathode) to release hydrogen gas.

**Information Booster:**

- **Name Origin:** The process gets its name from its products: chlor for chlorine and alkali for sodium hydroxide.
- **Sodium Hydroxide Formation:**  $\text{NaOH}$  solution is formed near the cathode, not the anode.
- **Industrial Uses:** Chlorine is used for water treatment and PVC; Hydrogen is used for fuels and margarine;  $\text{NaOH}$  is used for soaps, detergents, and paper making.

**Additional Knowledge:**

- **Option A ( $\text{Na}_2\text{CO}_3$  preparation):** Incorrect. The Solvay process is used to prepare sodium carbonate ( $\text{Na}_2\text{CO}_3$ ), not the chlor-alkali process.
- **Option C and D ( $\text{NaOH}$  at anode/Chlorine at cathode):** Incorrect. Sodium hydroxide forms near the cathode because sodium ions and hydroxide ions accumulate there. Chlorine forms at the anode.

**Q.32** Federalism is taken in the Indian Constitution from which of the following countries?

- A. USA
- B. Canada
- C. Australia
- D. Italy

**Answer:** B

**Sol:** The correct answer is **(B) Canada**

**Explanation:**

- The specific structural design of Indian federalism—a quasi-federal system with a strong central government—is borrowed heavily from the Canadian model.
- Article 1 of the Indian Constitution describes India as a 'Union of States', reflecting the Canadian pattern where states do not have the right to secede from the federation.
- Key Canadian features incorporated into the Indian Constitution include: vesting residuary powers in the Center, appointment of State Governors by the Center, and the advisory jurisdiction of the Supreme Court under Article 143.
- The Constituent Assembly preferred the Canadian federal pattern over the American model to ensure national unity, integrity, and administrative stability.

**Information Booster:**

- K.C. Wheare described the Indian Constitution as 'Quasi-Federal' due to its distinct combination of federal structure and strong centralizing tendencies.
- In the S.R. Bommai case (1994), the Supreme Court declared that federalism is an indispensable basic structure feature of the Indian Constitution.
- Features borrowed from the Canadian Constitution: Federation with a strong Centre, Residuary powers with the Centre, Appointment of State Governors, Advisory jurisdiction of the Supreme Court.

**Additional Knowledge:**

- USA (Option A): Source of fundamental rights, judicial review, independence of judiciary, impeachment of the President, and removal of judges; American federalism is a contractual agreement among independent states.

- Australia (Option C): Source of the Concurrent List, freedom of trade, commerce and intercourse, and the joint sitting of the two Houses of Parliament under Article 108.
- Italy (Option D): The Constitution of India did not draw major constitutional mechanisms or federal features from Italy.

**Q.33** Within the human circulatory system, which of the following blood vessels uniquely carries deoxygenated blood from the heart directly to the lungs?

- A. Aorta
- B. Pulmonary Vein
- C. Superior Vena Cava
- D. Pulmonary Artery

**Answer:** D

**Sol:** The correct answer is **(D) Pulmonary Artery**

**Explanation:**

- By general anatomical definition, arteries are blood vessels that carry blood *\*away\** from the heart, while veins carry blood *\*back\** to the heart. In the systemic circulation, arteries carry oxygen-rich blood, and veins carry oxygen-poor blood.
- However, the pulmonary circulation perfectly flips this rule. The **Pulmonary Artery** uniquely carries deoxygenated (oxygen-poor) blood from the right ventricle of the heart directly to the lungs, where it releases carbon dioxide and picks up fresh oxygen.
- It is the only major artery in the entire human body that functions by carrying deoxygenated blood.

**Information Booster:**

- **The Counterpart:** Conversely, the Pulmonary Veins are the only major veins in the body that carry highly oxygenated blood, returning the freshly oxygenated blood from the lungs back to the left atrium of the heart.

**Additional Knowledge:**

- **Aorta (Option A):** The massive main artery that carries freshly oxygenated blood from the left ventricle out to the rest of the body.
- **Superior Vena Cava (Option C):** A large vein that returns deoxygenated blood from the upper half of the body (head, neck, arms) back into the right atrium of the heart.

**Q.34** Which resolution from 1931 significantly inspired India's Directive Principles promoting social and economic justice aims?

- A. Karachi Resolution
- B. Lucknow Resolution
- C. Delhi Resolution
- D. Lahore Resolution

**Answer:** A

**Sol:** The correct answer is **(A) Karachi Resolution**

**Explanation:**

- The Karachi Session of the Indian National Congress held in March 1931 adopted the historic Resolution on Fundamental Rights and Economic Policy.
- Presided over by Sardar Vallabhbhai Patel, the session drafted a socio-economic charter for independent India.
- Drafted primarily by Jawaharlal Nehru, the resolution stated that "political freedom must include economic freedom of the starving millions."
- It advocated state ownership of key industries, protection of workers' rights, living wages, agrarian reforms, and abolition of landlordism.
- These economic pledges laid the foundational tenets for Part IV of the Indian Constitution (Directive Principles of State Policy).
- Detailed in NCERT Class 12 History (Themes in Indian History - Part III, Chapter 13 & 15).

**Information Booster:**

- The Karachi Session met shortly after the execution of Bhagat Singh, Sukhdev, and Rajguru, and officially endorsed the Gandhi-Irwin Pact.
- It was the first instance where the Indian National Congress defined what 'Swaraj' would entail for workers and peasants.
- Key economic demands included land revenue reduction, rent exemption for uneconomic holdings, and relief from rural debt.
- It guaranteed fundamental civil liberties including freedom of speech, press, assembly, and equality before the law.
- The social justice framework of the Karachi Resolution directly inspired constitutional Articles 38, 39, 41, 42, and 43.

**Additional Knowledge:**

- **Lucknow Resolution (Option B):** Passed at the 1916 Lucknow Session, famous for the Lucknow Pact between Congress and the Muslim League to present joint constitutional demands.
- **Delhi Resolution (Option C):** Refers to various regional proposals (e.g., 1927 Delhi Proposals), not the economic rights charter.
- **Lahore Resolution (Option D):** The 1929 Lahore Congress Session declared 'Purna Swaraj' (Complete Independence) as the national objective, leading to Independence Day celebrations on Jan 26, 1930.

**Q.35** Match List-I with List-II:

| List-I                                 | List-II                   |
|----------------------------------------|---------------------------|
| [A] Make in India                      | [I] 25th June, 2015       |
| [B] Swachh Bharat Mission              | [II] 25th September, 2014 |
| [C] Smart Cities Mission               | [III] 20th November, 2016 |
| [D] Pradhan Mantri Awas Yojana [Rural] | [IV] 2nd October, 2014    |

Choose the correct answer from the options given below:

- A. [A]-[II]; [B]-[IV]; [C]-[I]; [D]-[III]
- B. [A]-[IV]; [B]-[II]; [C]-[III]; [D]-[I]
- C. [A]-[III]; [B]-[IV]; [C]-[II]; [D]-[I]
- D. [A]-[II]; [B]-[IV]; [C]-[III]; [D]-[I]

**Answer:** A

**Sol:** The correct answer is **(A) [A]-[II]; [B]-[IV]; [C]-[I]; [D]-[III]**

**Explanation:**

- Make in India [A] was launched on 25th September 2014 [II] by the Government of India to transform India into a global manufacturing hub.
- Swachh Bharat Mission [B] was launched on 2nd October 2014 [IV] on Mahatma Gandhi's birth anniversary to achieve universal sanitation and cleanliness.
- Smart Cities Mission [C] was launched on 25th June 2015 [I] to drive economic growth and improve quality of life by developing 100 smart cities across India.
- Pradhan Mantri Awas Yojana [Rural] [D] was officially launched on 20th November 2016 [III] to provide housing for all in rural regions of the country.
- Thus, matching List-I with List-II yields the correct sequence: [A]-[II]; [B]-[IV]; [C]-[I]; [D]-[III].

**Information Booster:**

- Make in India initiative focuses on key sectors including automotive, defense manufacturing, electronics, pharmaceuticals, and renewable energy to boost domestic manufacturing.
- Swachh Bharat Mission was divided into two sub-missions: Swachh Bharat Mission (Gramin) under Ministry of Jal Shakti and Swachh Bharat Mission (Urban) under MoHUA.
- Smart Cities Mission operates as a Centrally Sponsored Scheme providing financial assistance over five years for urban infrastructure development.
- PMAY-Gramin restructured the former Indira Awaas Yojana (IAY) to construct pucca houses with basic amenities for eligible rural households.
- The selection of beneficiaries under PMAY-G is done through a rigorous process based on Socio-Economic and Caste Census (SECC) 2011 data and Gram Sabha verification.

- These flagship programs collectively contribute to rural development, urban modernization, economic growth, and social empowerment across India.

Additional Knowledge:

- Option B ([A]-[IV]; [B]-[II]; [C]-[III]; [D]-[I]): Incorrect because it falsely pairs Make in India with October 2nd and Swachh Bharat Mission with September 25th.
- Option C ([A]-[III]; [B]-[IV]; [C]-[II]; [D]-[I]): Incorrect because it misaligns Make in India with 20th November 2016 and Smart Cities Mission with 25th September 2014.
- Option D ([A]-[II]; [B]-[IV]; [C]-[III]; [D]-[I]): Incorrect because it incorrectly matches Smart Cities Mission with 20th November 2016 instead of 25th June 2015.

**Q.36** In August 2026, the Competition Commission of India (CCI) hosted the Meeting of Heads of BRICS Competition Authorities in which Indian city?

- A. Jaipur
- B. Udaipur
- C. Bhubaneswar
- D. Mumbai

**Answer:** B

**Sol: Correct Answer: (b) Udaipur**

Explanation:

- The **Competition Commission of India (CCI)** hosted the Meeting of Heads of **BRICS Competition Authorities** in **Udaipur, Rajasthan**, under India’s **BRICS Chairship 2026**.
- The meeting focused on strengthening cooperation on **fair competition** and addressing emerging challenges in competition law and policy.
- CCI presented a joint study on the **emerging competition landscape in the renewable energy sector** among BRICS countries.

Information Booster:

- The meeting concluded with a Joint Statement titled **“Strengthening Cooperation to Promote Fair Competition, including in RE Markets.”**
- India hosted the **10th BRICS Industry Ministers’ Meeting** in **Jaipur, Rajasthan**, focusing on **PartNIR** initiatives.
- The **13th BRICS Education Ministers’ Meeting** was held in **Bhubaneswar, Odisha**, from **5–7 August 2026**.

Additional Knowledge:

- The **16th BRICS Trade Ministers’ Meeting** was held in **Jaipur** on **6–7 August 2026**.
- Members adopted the **Jaipur Consensus** to study a **BRICS Invoice Discounting Mechanism** for improving trade-finance access for small businesses.
- **BRICS WAVES Bazaar 2026** was held in **Mumbai** on **6–7 August 2026**.

**Q.37** Match List-I with List-II:

List-I (Elements of Weather)List-II (Measuring Instruments)

[A] Wind speed

[I] Barometer

[B] Air pressure

[II] Wind vane

[C] Wind direction

[III] Hygrograph

[D] Humidity

[IV] Anemometer

Choose the correct answer from the options given below:

- A. [A]-[II]; [B]-[I]; [C]-[IV]; [D]-[III]
- B. [A]-[IV]; [B]-[I]; [C]-[III]; [D]-[II]
- C. [A]-[I]; [B]-[II]; [C]-[III]; [D]-[IV]
- D. [A]-[IV]; [B]-[I]; [C]-[II]; [D]-[III]

**Answer:** D

**Sol:** The correct answer is **(D) [A]-[IV]; [B]-[I]; [C]-[II]; [D]-[III]**

Explanation:

- Wind speed corresponds to (IV) Anemometer: An anemometer is a meteorological instrument equipped with rotating cups or propellers used to measure atmospheric wind speed and velocity.
- Air pressure corresponds to (I) Barometer: A barometer (mercury or aneroid) measures atmospheric pressure exerted by the weight of air columns above Earth's surface.

- Wind direction corresponds to (II) Wind vane: A wind vane (or weathercock) rotates on a vertical axis to indicate the direction from which the wind is blowing.
- Humidity corresponds to (III) Hygrograph: A hygrograph (or hygrometer) is an instrument that continuously measures and records relative humidity levels in the atmosphere over time.
- Matching these weather elements gives: [A]-[IV], [B]-[I], [C]-[II], [D]-[III].

**Information Booster:**

- Standard NCERT Class 11 Practical Work in Geography details key weather recording devices used at meteorological observatories.
- Air pressure is standardly measured in millibars (mb) or hectopascals (hPa) using an Aneroid Barometer or Fortin's Mercury Barometer. Standard sea level pressure is 1013.25 mb.
- Relative humidity is measured using a Wet and Dry Bulb Psychrometer or continuously charted using a self-recording Hygrograph.
- Rainfall is measured using a Rain Gauge (specifically Symons' Rain Gauge) in millimeters or centimeters over a designated 24-hour observation period.
- Maximum and Minimum Thermometers record the highest and lowest temperatures reached during a day in degrees Celsius (°C).

**Additional Knowledge:**

[A]-[II]; [B]-[I]; [C]-[IV]; [D]-[III] (Option A): Incorrect because Wind Vane measures wind direction (C), not wind speed (A).  
 [A]-[IV]; [B]-[I]; [C]-[III]; [D]-[II] (Option B): Incorrect because Hygrograph measures humidity (D), not wind direction (C).  
 [A]-[I]; [B]-[II]; [C]-[III]; [D]-[IV] (Option C): Incorrect because Barometer measures air pressure (B), not wind speed (A).

**Q.38** According to the Constitution of India, the 'Right to Freedom' is specifically guaranteed under which exact set of Articles?

- A. Articles 14, 15, 16 and 17
- B. Articles 23, 24, 25 and 26
- C. Articles 19, 20, 21 and 22
- D. Articles 32, 33, 34 and 35

**Answer:** C

**Sol:** The correct answer is **(C) Articles 19, 20, 21 and 22**

**Explanation:**

- Under Part III of the Constitution of India, the 'Right to Freedom' is a fundamental cluster guaranteed specifically under Articles 19, 20, 21, 21A, and 22.
- **Article 19** guarantees six basic democratic freedoms to Indian citizens: freedom of speech and expression, peaceful assembly without arms, forming associations/unions, free movement throughout India, residence in any part of the country, and practicing any profession/trade.
- **Article 20** provides protection against arbitrary conviction for offenses, ensuring protection against ex-post-facto laws, double jeopardy, and self-incrimination.
- **Article 21** grants protection of life and personal liberty, famously interpreted by the Supreme Court as the foundation of fundamental human rights, alongside **Article 21A** which guarantees free and compulsory education for children aged 6 to 14.
- **Article 22** provides procedural safeguards against arbitrary arrest and detention, including the right to be informed of grounds of arrest and presented before a magistrate within 24 hours.

**Information Booster:**

- Fundamental Rights contained in Part III (Articles 12 to 35) of the Constitution were heavily inspired by the Bill of Rights of the United States Constitution.
- Originally, Article 19 guaranteed seven fundamental rights, but the Right to Property under Article 19(1)(f) was deleted by the 44th Constitutional Amendment Act of 1978 and made a legal right under Article 300A.
- The rights guaranteed under Article 19 can be suspended during a National Emergency declared under Article 352, but only on grounds of war or external aggression, not internal armed rebellion.
- Crucially, rights guaranteed under Article 20 and Article 21 cannot be suspended under any circumstances, even during a declared National Emergency.
- Reasonable restrictions can be imposed on Article 19 freedoms by Parliament on grounds such as sovereignty, integrity of India, security of the state, public order, decency, or morality.

**Additional Knowledge:**

- **(A) Articles 14, 15, 16 and 17:** Form part of the 'Right to Equality' group (Articles 14 to 18), covering equality before law, prohibition of discrimination, equality of opportunity in public employment, and abolition of untouchability.
- **(B) Articles 23, 24, 25 and 26:** Articles 23 and 24 guarantee the 'Right against Exploitation', whereas Articles 25 and 26 cover the 'Right to Freedom of Religion'.
- **(D) Articles 32, 33, 34 and 35:** Article 32 guarantees the 'Right to Constitutional Remedies' (termed the heart and soul of the Constitution by Dr. B.R. Ambedkar), while Articles 33–35 deal with parliamentary powers to modify or enforce rights.

**Q.39** Which period is known as the period of 'Golden Revolution' in India ?

- A. 1981-1994
- B. 1991-2000
- C. 1991-2003
- D. 2001-2006

Answer: C

Sol: The correct answer is **(C) 1991-2003**

Explanation:

- The period between 1991 and 2003 in India is designated as the era of the 'Golden Revolution'.
- This revolution was dedicated to the high-paced growth and development of the horticulture sector, including fruits, vegetables, honey production (apiculture), and plantation crops.
- Nirpakh Tutej is recognized as the 'Father of the Golden Revolution' in India due to his pioneering contribution to promoting horticulture production.
- During this timeframe, targeted governmental initiatives drastically improved crop yield, nutritional security, export capabilities, and income generation for small farmers.

Information Booster:

- India emerged as a global leader in the production of various fruits like bananas and mangoes, as well as honey, during this period.
- Important agricultural revolutions in India include:
- Green Revolution: Foodgrains (Wheat and Rice)
- White Revolution: Milk and dairy products (Operation Flood)
- Yellow Revolution: Oilseeds production
- Blue Revolution: Aquaculture and fish production
- Silver Revolution: Egg and poultry production

Additional Knowledge:

- Option A (1981-1994): Represents an earlier phase focused on expanding oilseed production through the Technology Mission on Oilseeds launched in 1986.
- Option B (1991-2000): Overlaps with the initiation of post-liberalization economic reforms and structural adjustment in Indian agriculture.
- Option D (2001-2006): Refers to the rollout phase of the National Horticulture Mission (launched formally in 2005-06) to consolidate the gains of the earlier Golden Revolution period.

Q.40 Which of the following tunnels has been inaugurated in January 2026 to improve year-round connectivity between Sonamarg and Srinagar?

- A. Z-Morh tunnel
- B. Pir Panjal tunnel
- C. Atal tunnel
- D. Nehru tunnel

Answer: A

Sol: The correct answer is **(A) Z-Morh tunnel**

Explanation:

- The Z-Morh Tunnel is a strategic 6.5 km long road tunnel constructed near Gagangir in the Union Territory of Jammu and Kashmir.
- It ensures all-weather, year-round connectivity between Srinagar and the famous health resort of Sonamarg on the NH-1 (Srinagar-Leh Highway).
- The tunnel bypasses snow-prone areas prone to heavy avalanches during winter months, ensuring uninterrupted economic and tourism activities.
- It is crucial for border logistics, enabling seamless movement of military personnel and goods towards Kargil and Ladakh.
- Designed with modern safety standards, it includes an escape tunnel, sophisticated ventilation, and automated monitoring systems.

Information Booster:

- The Z-Morh tunnel works in tandem with the Zoji La Tunnel project to ensure all-weather access to Leh-Ladakh.
- Situated at an altitude of over 8,500 feet, it significantly reduces travel time and eliminates hazardous winter driving conditions.
- Constructed under the oversight of the National Highways and Infrastructure Development Corporation Limited (NHIDCL).
- The strategic infrastructure enhances economic development and eco-tourism opportunities in the Ganderbal district.

Additional Knowledge:

- Pir Panjal tunnel (Option B): Refers to the 11.2 km long railway tunnel on the Jammu–Baramulla rail line cutting through the Pir Panjal range.
- Atal tunnel (Option C): A historic 9.02 km tunnel under the Rohtang Pass in Himachal Pradesh connecting Manali to Lahaul-Spiti Valley.
- Nehru tunnel (Option D): Jawahar Tunnel (often colloquially referred to) is located on the Jammu-Srinagar national highway under the Banihal Pass.

Q.41 In 1964, who chaired the Committee on Prevention of Corruption and suggested the Central Vigilance Commission be established?

- A. K. Santhanam
- B. G V Ramakrishna
- C. P K Mohanty
- D. G K Pillai

Answer: A

**Sol:** The correct answer is **(A) K. Santhanam**

**Explanation:**

- The Central Vigilance Commission (CVC) was established by the Government of India in February 1964 to address governmental corruption.
- Its establishment was a direct recommendation of the Committee on Prevention of Corruption, headed by Shri K. Santhanam.
- The Santhanam Committee was tasked with reviewing the problem of corruption in central services and recommending measures to tackle it, resulting in the creation of an apex vigilance institution.

**Information Booster:**

- **Statutory Status:** Originally formed via an executive resolution, the CVC was granted statutory status much later through the Central Vigilance Commission Act, 2003.
- **Role:** It is conceived as the apex vigilance institution, free of control from any executive authority, monitoring all vigilance activity under the Central Government and advising various authorities.
- **Appointment:** The Central Vigilance Commissioner is appointed by the President of India on the recommendation of a committee consisting of the Prime Minister, the Minister of Home Affairs, and the Leader of the Opposition in the Lok Sabha.

**Additional Knowledge:**

- **G V Ramakrishna (Option B):** First Chairman of the Disinvestment Commission (1996).
- **P K Mohanty (Option C):** Headed a committee to review the governance of boards of banks in India.
- **G K Pillai (Option D):** Former Home Secretary of India, headed a committee to review the functioning of the RoDTEP scheme, not the CVC.

**Q.42** Which of the following seed is used in production of engineered diamonds?

- A. Graphite
- B. Cubic Zirconia
- C. White sapphire
- D. Moissanite

**Answer:** A

**Sol:** The correct answer is **(A) Graphite**

**Explanation:**

- Graphite is used as the primary raw carbon source and precursor seed in the production of lab-grown or engineered (synthetic) diamonds.
- Both graphite and diamond are allotropes of pure carbon (C), differing only in their crystalline lattice structure ( $sp^2$  planar hybridization in graphite vs.  $sp^3$  tetrahedral hybridization in diamond).
- Engineered diamonds are produced commercially using two major processes: High Pressure High Temperature (HPHT) and Chemical Vapor Deposition (CVD).
- In the HPHT method, high-purity graphite is subjected to extreme pressures (over 50,000 to 60,000 atmospheres) and extreme temperatures (  $1400^{\circ}\text{C}$  to  $1600^{\circ}\text{C}$ ) inside a specialized press.
- Under these conditions, graphite's hexagonal layer structure rearranges into the ultra-hard cubic crystal structure of a diamond.
- In CVD, a thin seed plate (often a thin diamond or graphite substrate) is placed in a vacuum chamber filled with carbon-rich gas (like methane) activated into plasma to deposit carbon atoms layer-by-layer.
- Engineered diamonds possess physical, chemical, and optical properties identical to natural mined diamonds.

**Information Booster:**

- India is a major global hub for the processing and manufacturing of Lab-Grown Diamonds (LGD), particularly centered in Surat, Gujarat.
- Union Budget initiatives in India have actively encouraged research and production of lab-grown diamonds to boost export potential.

**Additional Knowledge:**

- Cubic Zirconia (Option B): Synthesized zirconium dioxide ( $ZrO_2$ ), an inexpensive diamond simulant (imitation) that has entirely different chemical composition and lower hardness (8.5 on Mohs scale) than real diamond (10 on Mohs scale).
- White Sapphire (Option C): Colorless corundum ( $Al_2O_3$ ), a natural gem or simulant used in jewelry, but not a precursor seed for carbon diamond synthesis.
- Moissanite (Option D): Naturally occurring or lab-created Silicon Carbide ( $SiC$ ), another diamond alternative with high refractive index, but not a carbon seed source for synthetic diamonds.

**Q.43** Under which Act have the five Zonal Councils, including the Southern Zonal Council, been established?

- A. Government of India Act, 1935
- B. States Reorganisation Act, 1956
- C. Inter-State Council Act, 1990
- D. Constitution (Seventh Amendment) Act, 1956

**Answer:** B

**Sol:** The correct answer is **(B) States Reorganisation Act, 1956**

**Explanation:**

- The five Zonal Councils—Northern, Central, Eastern, Western, and Southern—were established under Part III of the States Reorganisation Act, 1956.
- Because Zonal Councils were created through an Act of Parliament rather than directly by constitutional provisions, they are statutory bodies, not constitutional bodies.
- The initiative was designed to encourage cooperative federalism and counter narrow regionalism, linguism, and particularism following the linguistic reorganization of states.
- Prime Minister Jawaharlal Nehru proposed zonal groupings to develop a habit of working together among neighboring states sharing common geographical and economic interests.
- The 1956 Act establishes the organizational composition, functions, secretarial apparatus, and operational procedures for all five original Zonal Councils.
- These councils enable Centre-State and inter-state consultation on socio-economic planning, border issues, transport systems, and power allocation.

**Information Booster:**

- The North-Eastern states were excluded from the 1956 Act's Zonal Councils and were later brought under a separate body called the North-Eastern Council created by the North-Eastern Council Act, 1971.
- The headquarters of the five Zonal Councils are located in New Delhi (Northern), Prayagraj/Allahabad (Central), Kolkata (Eastern), Mumbai (Western), and Chennai (Southern).
- Statutory bodies like Zonal Councils can be modified, restructured, or expanded through ordinary parliamentary legislation without requiring constitutional amendments.
- Key statutory objectives of Zonal Councils include integrating national economic planning, resolving regional disputes, and enabling joint developmental execution.
- The councils provide a regular forum where Chief Ministers and State Ministers deliberate directly with the Union Home Minister.

**Additional Knowledge:**

- **Government of India Act, 1935 (Option A):** This colonial-era legislation established federal principles and provincial autonomy in pre-independence India, but did not create Zonal Councils.
- **Inter-State Council Act, 1990 (Option C):** There is no 'Inter-State Council Act'; the Inter-State Council was established in 1990 by a Presidential Order under Article 263 of the Indian Constitution.
- **Constitution (Seventh Amendment) Act, 1956 (Option D):** While this amendment amended the Constitution to implement state reorganization, the statutory establishment of Zonal Councils was enacted through the States Reorganisation Act, 1956.

- Q.44** In February 2026, the Grammy Award for 'Record of the Year' was awarded to the track "Luther". Which two artists collaborated on this winning recording?
- A. Billie Eilish and Finneas
  - B. Kendrick Lamar and SZA
  - C. Lady Gaga and Bruno Mars
  - D. Bad Bunny and J Balvin

**Answer:** B

**Sol:** The correct answer is **(B) Kendrick Lamar and SZA**

**Explanation:**

- At the highly prestigious Grammy Awards, the accolade for 'Record of the Year' was bestowed upon the acclaimed track "Luther".
- This masterpiece was a powerful collaboration between the legendary Pulitzer-winning rapper Kendrick Lamar and the deeply influential R&B powerhouse SZA.
- The 'Record of the Year' is one of the four "General Field" awards (often called the Big Four) and is awarded specifically to honor the performing artists, producers, and audio engineers who crafted the specific sonic recording of the track.

**Information Booster:**

- **Historical Synergy:** Kendrick Lamar and SZA have a long history of wildly successful collaborations, most notably their Academy Award-nominated blockbuster track "All the Stars" from the Black Panther movie soundtrack.

**Additional Knowledge:**

- **Billie Eilish and Finneas (Option A):** A legendary sibling duo that has previously swept the Grammy Big Four categories.
- **Lady Gaga and Bruno Mars (Option C):** Known for their massive collaborative hit "Die With A Smile".
- **Bad Bunny and J Balvin (Option D):** Giants of Latin music who frequently collaborate, such as on their joint album "Oasis".

- Q.45** What is the President's primary constitutional duty as per the oath under Article 60?
- A. Formulate policies for the governance of India
  - B. Manage finances for the governance of India
  - C. Preserve, protect and defend the Constitution
  - D. Control Council of Ministers headed by Prime Minister

**Answer:** C

**Sol:** The correct answer is **(C) Preserve, protect and defend the Constitution**

**Explanation:**

- Under Article 60 of the Indian Constitution, the oath or affirmation taken by the President of India explicitly mandates the duty to "preserve, protect and defend the Constitution and the law".
- The oath obligates the President to devote himself/herself to the service and well-being of the people of India.
- The President serves as the constitutional head of state and acts as the ultimate guardian of constitutional machinery and principles.
- The oath is solemnized before entering office and is administered by the Chief Justice of India, or in their absence, the senior-most Judge of the Supreme Court available.
- Violating the Constitution is the sole ground specified under Article 61 for initiating the impeachment procedure against the President.

**Information Booster:**

- Article 52 states that there shall be a President of India, while Article 53 vests executive power of the Union in the President.
- The President acts on the aid and advice of the Council of Ministers headed by the Prime Minister as mandated under Article 74(1).
- Supreme Court rulings (e.g., Samsheer Singh case) affirm that the President represents the nation but does not rule the nation, maintaining a constitutional position equivalent to the British Monarch.
- Specific constitutional powers include legislative assent (Article 111), ordinance making (Article 123), and pardoning powers (Article 72).

**Additional Knowledge:**

- **Formulate policies for the governance of India (Option A):** Policy formulation is the constitutional function of the executive cabinet led by the Prime Minister.
- **Manage finances for the governance of India (Option B):** Financial management is executed by the Ministry of Finance and Parliament via Money Bills and Budgetary Approvals (Articles 112–114).
- **Control Council of Ministers headed by Prime Minister (Option D):** The President does not control the Council of Ministers; rather, the Prime Minister exercises leadership over the cabinet while advising the President.

**Q.46** Which combination best represents essential life processes for maintaining an individual organism?

- A. Nutrition, respiration, transportation and excretion
- B. Reproduction, variation, heredity and adaptation
- C. Locomotion, feeding, communication and defence
- D. Growth, movement, reproduction and response

**Answer:** A

**Sol:** The correct answer is **(A) Nutrition, respiration, transportation and excretion**

**Explanation:**

- Life processes are the basic, non-negotiable physiological functions performed by living organisms to maintain their physical existence and survive on a daily basis.
- Nutrition provides the chemical fuel. Respiration breaks down this fuel to release usable energy. Transportation (circulation) moves oxygen, nutrients, and waste throughout the body. Excretion removes toxic metabolic by-products.
- Without any single one of these four processes, an individual organism would quickly suffer system failure and die.

**Information Booster:**

- **Metabolism:** These four core processes are intimately connected to an organism's metabolism—the sum of all chemical reactions occurring inside the body.
- **Reproduction Exception:** While reproduction is essential for the survival and continuation of a \*species\*, it is not required for the survival of an \*individual\* organism (e.g., sterile worker bees live perfectly functional lives).
- **Homeostasis:** These life processes work in tandem to maintain a stable internal environment despite external changes, a concept known as homeostasis.

**Additional Knowledge:**

- **Option B (Reproduction, variation...):** These represent evolutionary and genetic processes tied to species survival and generational change, not daily individual maintenance.
- **Options C and D:** While locomotion, communication, and response to stimuli are important biological activities for many animals, they are not universally required for maintenance across all life forms (e.g., plants and fungi do not possess locomotion but still live).

**Q.47** Which outcome resulted from the Indian Councils Act of 1909 (Morley-Minto Reforms)?

- A. Establishment of provincial autonomy, complete financial authority, and autonomous ministries
- B. Expansion of legislative councils, admission of Indians to Viceroy's executive council, and new deliberative powers.
- C. Reduction of legislative council size, replacement of budgetary rights, and elimination of Indian representatives.
- D. Abolition of nominated seats, imposition of direct elections, and removal of official majorities.

**Answer:** B

**Sol:** The correct answer is **(B) Expansion of legislative councils, admission of Indians to Viceroy's executive council, and new deliberative powers.**

**Explanation:**

- The Indian Councils Act of 1909, popularly known as the Morley-Minto Reforms (named after John Morley, Secretary of State for India, and Lord Minto, Viceroy of India), considerably increased the size of the legislative councils at both the Central and Provincial levels.
- For the first time, the Act provided for the association of Indians with the executive councils of the Viceroy and Governors, leading to Satyendra Prasanna Sinha becoming the first Indian to be appointed to the Viceroy's Executive Council as a law member.
- It significantly expanded the deliberative functions of the legislative councils, empowering members to ask supplementary questions, move resolutions on the budget, and discuss matters of public interest.
- While an official majority was retained in the Central Legislative Council, the Act permitted non-official majorities in the provincial legislative councils.
- The reforms introduced a system of separate electorates for Muslims, under which Muslim representatives were to be elected exclusively by Muslim voters, thereby legalizing communal representation.

**Information Booster:**

- The membership of the Central Legislative Council was raised from 16 to 60, while the size of provincial councils was also enlarged non-uniformly.
- Due to the official introduction of legal communal electorates, Lord Minto came to be known as the 'Father of Communal Electorate' in British India.
- The Act did not establish responsible parliamentary government, as the executive remained non-answerable to the legislature and retained ultimate veto powers.
- Members of the legislative councils were elected through indirect elections by electoral colleges comprising local bodies, trade associations, and universities.
- The reforms failed to satisfy Indian nationalist demands for self-government led by the Indian National Congress, which criticized the creation of communal divisions.

**Additional Knowledge:**

- Option A: Provincial autonomy, complete financial decentralization, and responsible autonomous ministries were landmark features introduced under the Government of India Act of 1935.
- Option C: The Act actually expanded the size of legislative councils, enhanced budgetary discussion rights, and increased Indian representation rather than reducing or eliminating them.
- Option D: Official majorities were maintained at the center, nominated seats were retained, and direct universal franchise was not introduced by the 1909 Act.

**Q.48** The Indrajaaal-Sigma consortium secured orders worth ₹155 crore from the Ministry of Home Affairs for which indigenous anti-drone platform?

- A. Indrajaaal Shield
- B. Indrajaaal Ranger
- C. Indrajaaal Vajra
- D. Indrajaaal Sentinel

**Answer:** B

**Sol: Correct Answer: (b) Indrajaaal Ranger**

**Explanation:**

- The **Indrajaaal-Sigma consortium** secured **₹155 crore orders** from the **Ministry of Home Affairs (MHA)** for the **Indrajaaal Ranger Mobile Anti-Drone Patrol Vehicle (ADPV)**.
- It is a mobile **Counter-Unmanned Aircraft System (C-UAS)** designed to detect, track, identify and counter rogue drones.
- The deployment is aimed at strengthening India's **indigenous counter-drone capabilities** for security operations.

**Information Booster:**

- **Indrajaaal Ranger** is developed by **Indrajaaal Autonomous Defense Systems (IADS)**.
- It is built on the **Toyota Hilux platform** and manufactured in **Hyderabad, Telangana**.
- The system is designed for **border patrolling, VVIP protection, airports, urban policing and critical infrastructure security**.

**Additional Knowledge:**

- The Ranger is described as India's only **Anti-Rogue Drone Technology Committee (ARDTC)-approved ADPV**.
- Separately, the Ministry of Defence signed a **₹1,943 crore contract** with **General Atomics Aeronautical Systems** to lease two **MQ-9B Sea Guardian** aircraft to the Indian Navy for 30 months.
- **MQ-9B Sea Guardian** is a **High-Altitude Long-Endurance (HALE)** remotely piloted aircraft system.

**Q.49** Strain is a \_\_\_\_\_ quantity.

- A. Scalar
- B. Dimensionless
- C. Vector
- D. None of these

**Answer:** A

**Sol:**

The correct answer is {a}.

**Explanation**

{i} Strain is defined as the ratio of the change in dimension to the original dimension.

Linear strain = {Change in length}/{Original length}

{ii} Since it is the ratio of two quantities having the same dimension, strain has **no dimensions and no units**.

{iii} Strain possesses only magnitude and no direction.

Therefore, strain is a **scalar quantity**.

Hence, the correct answer is {a}.

**Additional Information**

{i} Strain is a **dimensionless scalar quantity**.

{ii} Stress is defined as force per unit area and is measured in **pascal {Pa}**.

**Q.50** Zika virus can be transmitted to humans through:

1. Mosquito
2. Goat
3. Duck
4. Bat

Select the correct option from codes given below:

- A. 1, 2, 3 & 4
- B. Only 1 & 4
- C. Only 1, 3 & 4
- D. Only 1

**Answer:** D

**Sol:** The correct answer is **(D) Only 1**

**Explanation:**

- Zika virus is a mosquito-borne flavivirus primarily transmitted to humans through the bites of infected *Aedes* mosquitoes, mainly *Aedes aegypti* and *Aedes albopictus*.
- These mosquitoes bite during the day, peak during early morning and late afternoon, and also transmit Dengue, Chikungunya, and Yellow Fever.
- Goats, ducks, and bats do not act as natural transmission vectors or primary reservoirs for spreading Zika virus to human populations.
- Besides mosquito bites, non-vector human-to-human transmission can occur through sexual contact, blood transfusion, and maternal-fetal transmission across the placenta.
- Infection during pregnancy can cause severe congenital malformations in newborns, most notably microcephaly and neurological disorders like Guillain-Barré syndrome.

**Information Booster:**

- Zika virus was first identified in 1947 in a rhesus macaque monkey in the Zika Forest of Uganda.
- The World Health Organization (WHO) declared Zika a Public Health Emergency of International Concern (PHEIC) in February 2016 following outbreaks in the Americas.
- Common symptoms include mild fever, skin rash, conjunctivitis, muscle and joint pain, and headache, lasting for 2 to 7 days.
- There is currently no specific antiviral treatment or widely licensed vaccine for Zika virus infection; prevention focuses on vector control.